

frosts out promptly to as many truckers as possible, and railroads entering this city assisted by telegraphing the information to all their stations. An immense amount of growing stuff, strawberries, lettuce, etc., was protected, and the observer has been informed that many thousands of dollars were saved as a result of the warnings.

In California no damage by frost was reported, and at the close of the month fruit trees were in better condition than is usual at this season. In the north Pacific coast States the month was unusually cool and heavy frosts were frequent during the last of the month.

The month opened with destructive freshets in the rivers and streams of the Appalachian Mountain system, and during the last few days of the month destructive floods occurred in Mississippi, Alabama, Georgia, Tennessee, and Kentucky.

BOSTON FORECAST DISTRICT.

The weather of the month was unusually warm, with excessive precipitation, mostly in the form of rain, and a number of severe windstorms. Warnings were given of the approach of these storms.—*J. W. Smith, Forecast Official.*

NEW ORLEANS FORECAST DISTRICT.

March was unusually stormy, and warnings for high winds were issued on a number of dates. These warnings were timely, and no windstorms occurred without warnings. The cold waves and frosts of the month were also accurately forecast.—*I. M. Cline, Forecast Official.*

CHICAGO FORECAST DISTRICT.

Advisory messages for severe storms were issued from time to time to steamboat companies at the various ports on Lake Michigan where a winter service is maintained. A cold wave crossed the district from the 13th to the 17th. Warnings were sent well in advance of this cold wave, and were completely verified. In the Northwest the cold wave was accompanied by high winds and snow. Advices for these conditions were sent to railroads and other interests.—*H. J. Cor, Professor.*

DENVER FORECAST DISTRICT.

The feature of the month was the unusual number of storms that developed in this district. For only one, however, the storm of the 14-15th, was it necessary to issue warnings. These warnings were fully justified in Colorado east of the foothills, in western, and the greater part of eastern Wyoming, and practically throughout the area specified west of the mountains.—*F. H. Brandenburg, Forecast Official.*

SAN FRANCISCO FORECAST DISTRICT.

The month was one of unsettled weather, with fairly frequent rain, although the total rainfall for the month was below the average. The month opened with one of the most severe storms experienced for some time in this section. At Point Reyes Light on March 1 a wind velocity of over 100 miles was reported for several hours, with an extreme velocity of 120 miles.

Light and heavy frosts occurred generally in California on the morning of March 4. Ample warning was given and no damage was done to fruit. The month passed without the usual injurious frosts.—*A. G. McAdie, Professor.*

PORTLAND, OREG., FORECAST DISTRICT.

The month was unseasonably cool but not unusually stormy in this district. Sharp frosts occurred frequently in the North Pacific States from the 24th to the 30th, and they were almost without exception accurately forecast.—*E. A. Beals, Forecast Official.*

HAVANA FORECAST DISTRICT.

No general advices were issued during the month. On the 5th the following was telegraphed all regular and display stations in Cuba:

Fresh to brisk and occasionally high southwest wind, shifting to cooler brisk and high northwesterly, this afternoon and to-night over western Cuba, and over eastern Cuba during Thursday.

A daily, except Sunday, wind forecast was furnished the captain of the port of Havana for the information of departing vessel masters.—*W. B. Stockman, Forecast Official.*

AREAS OF HIGH AND LOW PRESSURE.

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocity.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
High areas.										
I.....	2, p.m.	37	123	8, a.m.	32	65	4,625	5.5	841	35.0
II.....	3, p.m.	53	108	10, a.m.	47	54	8,725	4.5	828	34.5
III.....	5, p.m.	53	108	10, a.m.	47	54	2,775	4.5	617	25.7
IV.....	7, a.m.	35	120	13, a.m.	32	65	3,600	4.0	900	37.5
V.....	12, p.m.	36	106	17, a.m.	47	54	3,575	4.5	794	33.1
	15, p.m.	54	113	20, a.m.	48	86	2,675	4.5	594	24.8
Sums.....							20,975	27.5	4,574	190.6
Mean of 6 paths.....							3,496		762	31.8
Mean of 27.5 days.....									763	31.8
Low areas.										
I.....	1, p.m.	32	81	5, a.m.	47	54	2,100	3.5	600	25.0
II.....	1, p.m.	35	120	6, a.m.	45	64	4,400	4.5	978	40.8
III.....	5, p.m.	45	123	10, a.m.	45	64	3,750	4.5	833	34.7
IV.....	9, p.m.	37	105	14, a.m.	47	54	3,500	4.5	778	32.4
V.....	12, a.m.	52	122	17, a.m.	48	68	3,950	5.0	790	32.9
VI.....	14, a.m.	51	120	15, a.m.	42	113	700	1.0	700	29.2
VII.....	19, a.m.	37	114	21, p.m.	32	91	1,500	2.5	600	25.0
VIII.....	24, a.m.	37	114	27, p.m.	50	97	1,550	3.5	443	18.4
IX.....	27, a.m.	27	97	30, a.m.	45	67	2,250	3.0	750	31.2
X.....	29, a.m.	32	100	1, a.m.*	48	68	1,975	3.0	658	27.4
Sums.....							25,675	35.0	7,130	297.0
Mean of 10 paths.....							2,568		713	29.7
Mean of 35.0 days.....									731	30.5

*April.

For graphic presentation of the movements of these highs and lows see Charts I and II.—*Geo. E. Hunt, Chief Clerk, Forecast Division.*

RIVERS AND FLOODS.

During the early days of the month the ice in the upper Mississippi River moved out quietly, the dates at the various stations being as follows: At St. Paul, Minn., La Crosse, Wis., and Leclaire, Iowa, on the 9th; at Prairie du Chien, Wis., and Dubuque, Iowa, on the 11th; at Davenport, Iowa, on the 5th; at Keokuk, Iowa, on the 4th, and at Hannibal, Mo., on the 5th.

Navigation, however, was not generally opened as the early movement of the ice had not been anticipated. In the lower Mississippi the stages were much higher, owing to the Ohio River flood of the early days of the month and the torrential rains from the 26th to the 28th, but danger-line stages were not quite reached. The Missouri River, from the mouth of the Platte northward, opened generally from the 5th to the 12th, and the ice passed quietly down the river. For a few days, however, gorges above Yankton, S. Dak., caused conditions to assume a very threatening aspect. Moderate water stages prevailed during the remainder of the month.

In the Ohio River and the rivers of the East and South flood stages were the rule, particularly in the East, where the floods attained proportions such as, with but a single exception, had never before been recorded.